MARINA OPERATIONS
FOR
EXISTING FACILITIES

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

PREPARED BY: REGION 3
DIVISION OF WATER

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Introduction

Storm water runoff is precipitation that is not infiltrated into the soil, but instead washes over the surface of the landscape into streams, rivers, lakes and marine waters. As this water travels over land it picks up pollutants such as soil particles, street litter, automotive fluids, pet wastes and residue from industrial activities exposed to rain and snow. These contaminants wash into surface waters, impair the quality of water and impacting their usefulness for activities such as drinking water, swimming, fishing and boating. Pollutants which enter our water in storm runoff are referred to as Nonpoint Source Pollution (NPS).

As point sources of pollution were brought under control over the past 25 years, the impacts of nonpoint sources on our water bodies have become more apparent. It is listed as the primary source of contamination for more than 90% of the impaired waters of New York State.

Federal initiatives such as the Long Island Sound Study Comprehensive Conservation and Management Plan and the Coastal Zone Act Reauthorization Amendments have emphasized the need for better management practices, particularly in water front areas. New programs have been created to regulate activities recognized as contributors of NPS Pollution, such as construction, urban storm sewer systems, agriculture, highway maintenance, silviculture and industrial activities.

Recreational boating is not considered by the NYS DEC to be a significant source of NPS Pollutants. It has been, however, identified as an activity of some interest. It has become increasingly popular as coastal areas and locations near inland water bodies become more developed and more populated. This has resulted in an increase in the number and size of marinas and therefore increased the potential for adverse impacts to water quality.

This potential however, does not warrant an increase in regulations targeting marinas. The direction of the NYS DEC Division of Water is rather to provide information to marina operators advising them of current Best Management Practices (BMP).
This pamphlet lists some of the potential sources of pollution from routine activities at marinas and recommended practices to prevent pollutants from entering the waters of New York State.

The following is a list of some methods of handling water runoff and ways to prevent substances commonly found at marinas from contaminating the receiving water where your marina is located.

1. Storm Water Controls

Storm water runoff from a marina can be the source of many water quality problems if proper practices are not implemented.

- Divert off-site storm water away from your marina, especially the areas used for maintenance and repairs.
- Allow as much water as possible to infiltrate into the ground by using measures such as vegetated strips and grass, or basins that allow water to collect.

(figure 1)

- Pave only areas that are necessary for your operation.
- Porous pavement is an effective way to increase infiltration in boat storage areas and parking lots. However, care must be taken to keep the surface clean.
- Minimize or eliminate storm water runoff from the maintenance area by having boat repairs performed in an enclosed area under roof. If this is not practical, require each boat being worked upon to have a plastic tarp under it. If you cover boats with shrink wrap for winter storage, save the plastic and give it to patrons to use as drop cloths. The tarp can be spread out when work is being performed and folded under the boat at other times. It can then be rolled up and disposed of when the repairs, painting, etc., are complete. Another way to protect water quality is to lay filter fabric under boats being worked upon. This material will retain paint chips and other debris while allowing water to pass through. These practices will prevent contaminants from being washed into the receiving water and it will keep your marina cleaner and more attractive.
- Improve the quality of storm water that enters the storm drain system by making

sure that the inlet basin is kept clean.

- Install oil absorbent material and a hood over the outlet in the basin to prevent oil and floatables from passing out.

(figure 2)

- In addition, sand filters, oil-grit separators, holding tanks and vortex concentrator chambers can be installed to further improve storm water quality before it is discharged.

- Vegetated strips, grass swales, infiltration basins, artificial wetlands and wet ponds are other ways of managing storm water at your marina requiring varying amounts of land to construct. Areas in the marina not committed to other uses should be evaluated for such structures.

- Do not allow storm water runoff to mingle with wash water contaminated by hazardous substances used to aid cleaning.

2. Wash Water Controls

The pressure washing of boats primarily done at the end of the season generates a large portion of the wash water at a marina.

- Ideally, washing should be performed over a drain connected to the sanitary sewer. This drain should not receive stormwater runoff from the surrounding area. If the wash water is discharged into the marina basin or adjacent waters, no soap or detergents should be used.

- Routing the water through an oil water separator and grit chamber or some filtration device should also be considered to remove oil, grease, and bottom paint chips.

- As a temporary measure, use straw bails to impound wash water and allow sediment to settle out during bottom washing.

- For in-water washing require boat owners to wash their boats topside with plain water only and use a minimum amount of phosphate free detergent on decks.

- Prohibit in-water hull cleaning, scraping or any process that is performed below the boats water line to remove paint from the hull, especially boats with copolymer antifouling bottom paint. Haul the boats out for hull scraping. If a boat has enough growth on the bottom to need cleaning, it obviously needs new bottom paint. Copolymer antifouling paint remains soft and brushes off easily. Brushing or scraping the bottom in the water would remove the copolymer paint, releasing pesticides to the water.

- In-water hull cleaning is permissible where copolymers are not used and when it is done frequently enough so that organisms that require heavy scraping (e.g., barnacles or mussels) do not colonize the ship's hull. Live fouling organisms are relatively soft and can be freed with a brush, rather than a scraper. If done properly, very few paint chips need to be released into the water during in-water hull cleaning.

3. Hull Maintenance and Repairs

Provide and clearly mark designated work areas for boat maintenance. Do not permit work outside the designated areas.

- If sandblasting or spray painting are to be conducted in your yard have the boat placed in a building or temporary enclosure to prevent blasting materials, paints and debris from being spread over the surrounding area.

- If the vessels are being worked on in a dry dock or on a railway, care should be taken to remove blast materials, paints and debris from the cradles or dry dock deck prior to relaunching.

- All sandblasting grit, paint and debris should be collected and disposed of properly. In some cases the aggregate of these materials may need to be disposed of as hazardous waste if leachable metals (e.g., Lead) are present in sufficiently high concentrations. Labels and MSD data sheets for the paint products may help make this determination.

- Where sandblasting is done, obtain assistance for hazardous materials handling from your Regional Water Engineer or EPA. Consult the EPA guide entitled: *The Marine Maintenance and Repair Industry* (EPA/625/7-91/015, October, 1991). make this determination.

- Use a ground cloth when refiberglassing, caulking, scraping and brush painting.

4. Fueling

Vessel fueling can pose a high risk of releasing petroleum products directly into the water if precautions are not taken.

- To reduce the chance of spills, locate your fuel dock in an area protected from wave action and boat wakes. Also take into consideration spill containment when choosing the fuel dock location.

- Always have an employee supervise the refueling process.

- Make sure the pumps automatic shut-off is working properly.

- If the tank vents are not equipped with a fuel/air separator, have the boat owner place a container under the air vent while refueling inboard tanks.

- Have a sufficient quantity of oil-spill containment and absorbent materials on hand to contain small spills. These materials may include absorbent pads and booms, covers for sewer drains, clay absorbent and containment boom. Each item should be inspected annually and replaced as required.

- Place drip trays beneath fuel connections at the dock to prevent fuel leakage from reaching the water. Fix all leaking connections immediately.

- Any petroleum storage tank above 1100 gallons in capacity falls under NYS DEC Petroleum Bulk Storage Regulations. These regulations require the registration and monitoring of storage tanks to insure that proper leak detection and containment measures are in place. A copy of these regulations (6 NYCRR Part 612, 613 and 614) can be obtained from your Regional NYS DEC Office.

- Train employees in the use of containment measures.

- Develop a spill response plan. Select a spill response contractor that could respond to your location in a minimum amount of time.

- Report spills to the New York State Department of Environmental Conservation Division of Spills Management. The N.Y.S. 24 hour hot line number is 1-800-457-7362.

(figure 3)

5. Sewage

Prevent poorly treated or untreated sewage from entering the marina basin and surrounding waters.

- Provide adequate toilet facilities for marina patrons.
- Install a dump station for mariners to empty portable heads.
- Install a pumpout facility to encourage the discharge or holding tanks shore side.
- The Clean Vessel Act Pump Out Grant Program administered by the NYS DEC Division of Fish and Wildlife can provide up to 75% reimbursement of the cost of installing or upgrading a Pumpout or dump station. The program is funded though 1998. Contact your Regional NYS DEC Office for details and a application.
- Inspect your sanitary facilities on a regular basis to insure they are properly maintained.
- A radio dispatched pump out vessel is another option. It eliminates the need to move boats to a pump out dock and since it is mobil it could service more than one marina.

. Where disposal of holding tank wastes into a municipal sewer system is not possible, dispose of wastes in a properly designed on site septic system.

- Do not discharge boat wastes into a septic system unless it has been specially designed for this purpose.

- Post signs and distribute information explaining the benefits or proper sewage disposal at pump out and dump stations to patrons. If your pump out station is self serve make sure complete instructions are posted for its operation. Conducting a training session for regular patrons is also recommended.

PUMP IT DON'T DUMP IT

(figure 4)

- Prohibit the discharge of sewage from Marina sanitation devices (MSDs) within your marina. Include a requirement not to discharge in the slip rental contract and require that dye pellets be placed in each boats head. Impose penalties for violating the rule.

- Do not wash hoses and fittings used for vessel pump outs on the dock or pier allowing rinse water to drain into the receiving water. Any residual waste in the hoses should not be allowed to drain into the receiving water.

6. Solid Waste

Prevent the entry of solid wastes into surface waters directly or through storm water or wash water runoff.

- Provide an adequate number of trash receptacles throughout your marina.

- Provide receptacles for the disposal of boat maintenance wastes.

- Cover the receptacles to exclude animals and prevent material from blowing out

and prevent rain from leaching material onto the ground.

- Sweep or preferably vacuum areas where debris accumulates.

- Provide labeled receptacles for recyclable materials; paper, cans, metal and glass.

- If you accept old batteries for recycling, store them under cover on an impervious surface.

7. Liquid Wastes

Provide storage facilities for liquid wastes to prevent their entry into the marina basin and surrounding waters.

- Provide clearly marked barrels for used motor oil, antifreeze, and mineral spirits.

- Keep the containers in a secured area and monitor what fluids are placed in each to prevent substances from being mixed. Fluids contaminated with other materials become more difficult to recycle.

- Build a curb or berm around the area where these barrels are placed to contain any spill and have absorbent materials at the area in a clearly marked storage cabinet.

8. Fish Cleaning

If your marina caters to fishermen, designate a fish cleaning area. Have covered receptacles for fish carcasses.

- Fish carcasses should be disposed of off shore outside the harbor, used as chum and bait, or in some other environmentally responsible manner such as composting. Environmental Conservation Law states that, "**Waste fish shall not be left on shore or in the water within 500 feet of shore** ".

- If possible, provide an outdoor stainless steel sink which discharges to the sanitary sewer equipped with a garbage disposal unit. This will diminish odor, insects and other aesthetic problems It will also prevent nutrients from accumulating in the water of the marina which may cause algal and bacterial blooms which depletes the dissolved oxygen.

- Issue and enforce rules requiring that fish cleaning be conducted only in the designated area.

9. Boat Operation

Competent boat operation is critical for reduction of pollution in marina waters.

- Establish and enforce no wake zones. In addition to the nuisance and potential damage caused by wakes in a dockage area, the wave action and prop wash suspend bottom sediments which increase turbidity and may contain contaminants and nutrients. Wakes may also damage rooted aquatic plants which are an important part of shallow water habitats.

- Avoid berthing deep draft vessels in areas too shallow for them. Vessels dragging bottom as they transit shallow areas will also resuspend sediments in the water.

- If you have small outboard powered boats in shallow areas of the marina instruct operators to row or pole their boats to deeper water. This will also prevent increases in turbidity and save propellers.

- Discourage engine idling to reduce hydrocarbon emissions to the air and water.

10. Shoreline Stabilization

Shoreline stabilization may be necessary in some marinas to reduce erosion.

- Sediment and soil washed from the shoreline by storm water runoff or wave action is a source of water pollution. Shoreline stabilization at a marina normally means bulkheads, riprap,jetties and breakwalls. These measures, while effective in protecting the areas they are installed at, often transmit wave energy to adjacent areas and reduce biodiversity if not properly designed. Other measures such as vegetation, sloping revetments and gabions should be employed when possible. Natural vegetation is generally preferable to non-indigenous species, requiring less effort to obtain good results. **A freshwater or tidal wetland permit is required to install many shoreline improvements** . Contact the NYS DEC Division of Regulatory Services in your Region prior to starting any project.

- Plan and design any shoreline structures so that the energy of wave action and currents are not transferred to adjacent areas.

- Establish vegetated buffers along unprotected shoreline areas to reduce erosion and improve water quality.

11. Water Circulation

Adequate water circulation is necessary in a marina environment to prevent stagnation.

- An existing marina posses limits upon what modifications are practical to

improve the flow of water through it. The layout of docks within the marina, however, can be altered to maximize circulation and minimize stagnate water and the build-up of pollutants and sediment.

- Eliminate square corners where possible. This can reduce the accumulation of debris and silt inside the marina.

- Establish two entrances at opposite ends of the marina to promote circulation within the basin.

- Avoid dead-end channels. Arrange docks in ways that enhance the flow of water rather than obstruct it.

- Lanes within the marina should be wide at the seaward end and progressively narrower at the inland end to allow water to flow freely and maintain velocity.

- Do not dredge the marina basin deeper than the adjacent channel.

- Dredge the marina so the bottom contour deepens in the offshore direction. This will prevent the pooling of water in the marina.

- Keep deep draft vessels which do not require shore power or other services, such as sailboats, on moorings outside the marina when possible to reduce the need to construct long docks and dredge large areas.

12. Hazardous Materials Handling

Hazardous materials are commonly found at marinas and must be handled and store correctly.

- Several substances used at marinas are classified as hazardous. Chemicals, paints, oils, solvents, acids, and caustic solutions should be stored in a protected area which will prevent the discharge of these materials into the receiving water or ground water. Marina owners and operators are responsible for determining whether any materials handled at their facility are regulated and for complying with regulations regarding handling, storage and transportation of any hazardous materials. For more information refer to NYS DEC Division of Hazardous Substance booklet, Are You A Small Quantity Generator.

13. Public Education

Education is the best way to make the boating public aware of repercussions of their actions while on the water.

- Most of the pollution prevention measures listed in this pamphlet will not be successful without public participation and support.

- Inform marina patrons of the rules you have enacted and services you offer through signs and mailings. Have them sign a pledge to obey the rules when they sign their slip rental contract. Also inform them of the reasons for these measures and the expected benefits.

- Support and participate in educational programs designed to encourage the boating public to follow practices consistent with their responsibilities as good neighbors on and off the water.

- Enlist the aid of the NYS DEC, and local organizations in providing educational materials and giving presentations at public meetings.

14. SPDES STORM WATER PROGRAM

GENERAL INFORMATION - PERMITS

There are two types of SPDES permits:

1. Individual (site-specific) SPDES

A State Pollutant Discharge Elimination System (SPDES) permit is required for non-storm-water discharges that might include oil, grease, solvents, detergents, or hazardous substances used to wash boats, pavements, or equipment. SPDES authorization may also be needed for storm water runoff, either under the individual SPDES permit or the SPDES General Permit for Storm water (GP-93-05). Completed applications are filed with the DEC Regional Permit Administrator serving your county.

2. SPDES General Permit for Stormwater (GP-93-05)

The federal NPDES regulations also require a permit for storm water runoff from industrial activities defined under 40 CFR Part 122, Section 122.26(b)(14)(i) through (xi). A facility whose **primary** activity is identified as Standard Industrial Classification (SIC) Code 4493 is one that needs permit authorization for its storm water discharge to surface waterways. The main requirement of this type of permit is that each facility develop and implement a site-specific storm water pollution prevention plan.

If you need help deciding which permit you need, if any, call your DEC Regional water Engineer. Application forms are available by calling 1-800-DEC-2922 or from any DEC Regional Office. Send completed storm water Notices of Intent to Storm Water Notice of Intent, PO Box 1215, Newington VA 22122.

15. Additional Information

If you would like more detailed information on ways to prevent nonpoint source pollution send for the EPA document Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters using the form attached to the back of this pamphlet. The document is free of charge.

REFERENCES

EPA, 1993. Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters. U.S. Environmental Protection Agency, Office of Water, Washington, D.C., EPA 840-b-92-002.

Fugro & Mc Clelland, 1992. Best Management Practices for Coastal Marinas. Connecticut Department of Environmental Protection, Office of Long Island Sound Programs and Bureau of Water Management. Hartford, Ct.